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ABSTRACT

Control of the AIDS (Acquired Immune Deficiency Syndrome) epidemic requires public education for risk behavior change. Social Learning Theory and behavior modification have been used for the reduction of risk behaviors for heart disease with moderate success. It remains to be seen if this behavior modification technology can be successful in changing individuals' sexual practices which put them at risk for AIDS. An innovative play format was used as a method for delivering AIDS education. Subjects (n=351) attending play performances were from a low to moderate risk group, consisting of approximately one-half college students and one-half members of the community of San Diego, California. A questionnaire measuring knowledge about AIDS and attitudinal variables about AIDS and homosexuality was administered as a pretest and posttest. Although the overall change in AIDS knowledge was modest, the change was much greater for the subset of the audience who were poorly informed about AIDS before watching the play. These results suggest that dramatic plays can invoke important changes in a wide range of people interested in these issues. Follow-up studies are necessary to determine effects on behavior. (ABL)

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ABSTRACT: Public education about AIDS requires strategies that reflect the factual, yet sensitive and ever-changing issues surrounding AIDS. It was hypothesized that innovative strategies would be required to provide effective AIDS education to the public. Traditional health education and public information campaign strategies(eg.pamphlet distribution) have often not been very successful, if evaluated at all. The purpose of this research was to develop, implement, and evaluate an innovative AIDS education protocol that addressed these concerns. Current, factual information was incorporated into a sensitive, live-theater dramatization about AIDS. The documented tension and anxiety reducing qualities of humor and empathy were the cornerstone characteristics of the script. A total of 351 individuals attended the seven performances and completed a pre-/post-test questionnaire that evaluated knowledge and attitudes about AIDS. Results showed that all seven cohorts had improved knowledge and attitudes about AIDS following the play. The binomial probability of this occuring by chance is $<.001$. Additionally, the magnitude of change for four of the five factors tested in all seven cohorts was significant ($p<.01$). Considering these results and that fear, anxiety, and misinformation about AIDS is pervasive, and that this is a potentially cost-effective approach, further exploration of a live theater approach to public AIDS education is recommended.

Evaluation of an Innovative Stategy for AIDS Education: The Impact of Live Theater

Introduction

Control of the AIDS epidemic requires public education for risk behavior change (1). Education is required for both low risk and high risk groups, with corresponding differences in the exact behavior changes needed. The AIDS epidemic may be the first disease to challenge the educational and behavioral science professions within Public Health and Medicine since the polio epidemic of the mid 1940s. Without radical changes in behavior in those at highest risk, and less radical but important changes in behavior in those at lower risk (e.g.use of condoms among heterosexually active singles), the spread of AIDS will continue and accelerate (2).

Fortunately, Social Learning Theory (3) and behavior modification (4,5) have already been introduced to public health, primarily for the reduction of risk behaviors for heart disease (6-8). This represents a developing technology of health behavior change, which has been moderately successful in altering lifestyles (9-12). Interventions range from traditional education (provision of factual information), which tends to rely on didactic processes, to behavioral skills training, which involves explicit models, practice (role playing) with corrective feedback (shaping), and contingency management, where reinforcement and punishment procedures are employed. Applications to date have emphasized antecedent interventions (ie.interventions to enhance

the conditions that precede a behavior) partly as an extension of historical precedents in Health Education and partly as a function of practical limitations--it may be less expensive to publish brochures than to engineer changes in reinforcing consequences for target behavior (13).

With the occurrence of the AIDS epidemic it remains to be seen whether behavior modification technology can be as successful in changing sexual practices as it has been in changing risk behavior for heart disease. Among the many interventions to be developed and tested for changing the knowledge, attitudes and behavior of the public regarding AIDS, the use of dramatic plays offers special promise. Plays exploit Social Learning Theory perhaps more completely than any other antecedent intervention. By definition plays provide models of behavior--desired and undesired. Plays can provide clear models of reinforcement or benefits for health behavior and models of the negative or punishing consequences of health risk behavior. They also can provide explicit models of behavior change and explicit models of emotional reaction to disease, uncertainty and unfamiliar behavior. Thus, plays and other dramatic presentations can provide factual information, model attitude and behavior change, and provide vicarious reinforcement. Short of directly modifying contingencies of reinforcement, such interventions may be powerful means of <u>initiating</u> health behavior change.

Research on the educational value of theatrical plays is very limited and has only recently begun (14-18). However, in many parts of the world, the use of theater plays ("Ludruk" in

East Java), singing poets ("Cantadores" in northeast Brazil), and folk theater ("Bhavai" in India) has long been the traditional mechanism for communicating with and educating the public about many public health concerns, particularly family planning and contraception. These traditional channels of public education coexist with emerging mass communication channels and in general are well-accepted and very credible, especially among rural people (19).

Necco, Wilson and Scheidemantel (15) report that people become more aware of and deal with their own feelings and emotions when dramatics are used versus traditional didactic methods of education. Verriour (16) has shown that drama is a medium of learning through which individuals can reflectively filter experiences in and beyond the fictional context of the drama. Coleman (18) suggests several benefits to using drama for educational purposes in the classroom: 1) students are stimulated and inspired by the enthusiam displayed through dramatics, 2) they show marked increases in attention span, 3) since they have longer attention spans, they are able to learn more, and 4) they become more alert and have a "heightened sense of awareness of their environment" that remains after the performance is over. He further suggests that people retain what they have learned longer when they associate it with something out of the ordinary. Finally, use of live theater or dramatics allow individuals to more effectively explore psychosocial and cultural issues such as the social mores and taboos regarding sex, drug addiction, disease, death and dying, and racial prejudice; and the resulting

confusion and fear that arises when such mores or taboos are challenged. These issues are obviously very salient for the AIDS epidemic and need to be addressed if AIDS educational strategies are to be effective.

Fear of AIDS is a world-wide problem that cuts across all ages, educational and socioeconomic levels, and racial backgrounds (20). Fear and anxiety due to lack of information and misinformation about AIDS may interfer with learning the facts about AIDS and reducing risk behaviors. This has been reported over the years in other areas where anxiety has been found to have a curvilinear (ie. an inverted U-shaped) relationship with learning and performance of a desired behavior; where no or very low levels of anxiety or arousal, and/or very high levels of anxiety or arousal, are associated with decreased learning and performance of the desired behavior. Whereas optimal learning and performance are associated with moderate levels of anxiety or arousal (21). Thus traditional health education techniques may be hampered when used to educate about AIDS for people who have too little, or too much anxiety/arousal about AIDS. Those who feel that they are not susceptable or have no risk of contracting AIDS may not be anxious or aroused enough to seek information or heed advice. On the other hand, anonymous antibody testing center counselors across the state of California are reporting that some individuals coming in to be tested are so anxious, believing they have been exposed or infected, that they do not "hear" the information and advice that is given them in the counseling session. This may consequently hamper their ability to decrease

their risk behavior.* The authors suggest that some amount of arousal or anxiety regarding AIDS is necessary before an individual will seek out information (eg.viewing an AIDS drama) but that extreme anxieties surrounding AIDS will interfer with the individual's abilities to learn factual information about AIDS and if necessary, make changes in behavior.

Creative efforts at diminishing this anxiety and fear so that factual information may be learned and acted upon, are needed in the public health arena. For many low risk individuals, learning the facts about AIDS and desensitization is all that is needed to dispel their unfounded fears regarding AIDS. For individuals whose behavior puts them at risk for contracting the AIDS virus, this desensitization may be a prerequisite for additional behavior modification efforts designed to increase specific social skills and safer sexual behavior. It is plausible that dramatic plays and video reproductions can serve this fear reduction, desensitization function and thereby increase the likelihood that factual information about AIDS will be learned, allowing for a more factual basis for formation of attitudes about AIDS. The present study evaluated these possible effects in a pre-post test evaluation of seven performances of a dramatic play concerning AIDS. This analysis examined the extent to which a play leads to changes in knowledge and attitudes in a general audience.

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* In progress research funded by CDC. Personal communications with Alternate Testing Site Coordinators in California.

METHODS

Setting

Metropolitan area. San Diego is a U.S. Mexican border community of almost 2 million people. Together with its neighbor to the south, Tijuana, Mexico, the population is over 3 million. Tourism and high technology are the main industries, along with three large military bases: Miramar Naval Air Station, San Diego Naval Base and Camp Pendleton Marine Base. The socio-political climate of the area is relatively conservative for a metropolitan area of its size and geographic location (as a west coast, international border community and seaport). San Diego has a high immigration rate from other parts of California, the U.S., Mexico and southeast asia.

Risk group context. There is an estimated 120,000 homosexual and bisexual males in San Diego, with an approximate 30% HIV antibody seropositivity rate (22). The number of IV drug users and prostitutes in the San Diego-Tijuana area is currently unknown and thus seroprevalence in these risk groups is difficult to determine. San Diego physicians have diagnosed approximately 400 cases of CDC defined AIDS since 1981 and the number of cases has been doubling roughly every year. An additional third of these cases (roughly 130) have migrated to San Diego after formal and semi-formal diagnosis elsewhere. There is an overall 20% seropositivity rate among those being tested at the anonymous testing site located at the San Diego County Health Department (22). Increasing numbers of low-risk, seronegative, "worried

well" heterosexuals are being tested as well as the original risk group members. This is causing the overall positivity rate to decline which should be interpreted very cautiously (23). Additionally, this is putting an increasingly overwhelming burden on the health department and may be hampering the testing sites ability to provide services to the high risk individuals most likely to contract and spread the disease. Thus, the visibility of the epidemic is relatively high and increasing for the general public in San Diego.

Community Knowledge and Anxiety. The prevalence of AIDS in San Diego has contributed to the high and sustained community anxiety regarding the disease, high risk groups and sexual behavior. Misinformation regarding AIDS is pervasive, especially among lower risk individuals.* Interestingly, there is much apathy and misinformation among students in San Diego, as elsewhere (24). This is significant since adolescents are potentially "the next high risk group for AIDS" according to the US Surgeon General, due to their frequent experimentation with drugs and sexual relationships (25).

University setting. The play was presented in an auditorium for experimental theater on the campus of San Diego State University (SDSU), a campus of 36,000 undergraduate and graduate students and 4,000 faculty and staff. Each presentation was open to the community at large. The play was produced by the San Diego AIDS Project and the Student Health Advisory Board (SDSU),

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*Rugg,D. Unpublished pilot data on AIDS knowledge in San Diego.

with sponsoring support from the Student Health Services, the Associated Students Organization, and the Graduate School of Public Health at San Diego State University. Investigators from the SDSU Graduate School of Public Health determined the play content to be factually correct and adequately measured by the questionnaire. Thus, the play took place in a social and physical setting which provided for high visibility and credibility.

Subjects

Subjects were 351 volunteers who attended the play and completed both a pre-test and post-test questionnaire. The theatrical intervention in this study was targeted for a general audience of low to moderate risk of actually contracting AIDS. Subject demographics are shown in Table 1. Subjects were generally caucasion, equally likely to be male or female, with a average age of 30. Roughly half of the sample was from the campus community and half from the community at large. Roughly a third reported membership in one of the CDC defined risk groups.

Insert Table 1 here

Recruitment

The play was advertised through campus and community newspapers, large, full color posters placed throughout the

campus and community, radio announcements and through flyers distributed to SDSU faculty and staff requesting them to announce the play to their classes and co-workers. The most successful recruitment strategy was word-of-mouth recruitment. Approximately 450 individuals attended the play.

Prior to each performance, the director of the play invited the audience to participate in an evaluation of the performance by filling out the pre-performance and post-performance questionnaire that were placed on their seats prior to each performance. To insure anonymity, subjects were asked not to put their name on the questionnaire and were told to fold their questionnaire and put it into the large envelope as the research assistant came around to collect them (once before the play and then again after the play). Persons who came late or left early were not able to complete either the pre- or post-test questionnaire, and were not included in this analysis.

Questionnaire

A one page, double sided, 20 item, Likert-scaled (1-strongly agree to 5-strongly disagree) pre/post-test was developed. Items measuring knowledge about AIDS were rationally derived based on AIDS facts, myths and other issues that were covered in the play and important to understanding the AIDS epidemic (such as knowledge about the cause of AIDS, how it is transmitted, how to prevent transmission, etc.). Several attitudinal variables about AIDS and homosexuality were also measured. Several items were worded identically to items in a larger, international study of AIDS knowledge, attitudes and beliefs (20) for comparison

purposes. Demographics and risk group membership along with information on sources for information about AIDS and this play specifically were also recorded. The questionnaire was self-administered immediately preceding the performances and then immediately following the performances (but prior to the panel discussion so as to control for the potential confounding effect of the panel discussion).

Reliabiity of the Questionnaire.

Three reliability check/control items were included to test the reliability of the pre-post test responses. One item tested pre-post knowledge of factual information that was not presented in the performance and was not expected to differ significantly form pre to post test and, in fact, did not. The other two items measured self-reported behaviors that could not have changed during the course of the 2 hour performance. These items did not differ significantly from pre-test to post-test, as expected. These items served as a reliability check against the possibility that respondents were responding to unintended demand characteristics of the study. Also, the scales for some items were reversed to discourage inattentive responses, and then analyzed to determine if bias existed. No response bias was found.

Dramatic protocol - Description.

A 1.5 hour factual, yet compassionate drama about the life of a young gay man who discovers he has AIDS, was produced for this AIDS educational effort. In addition to the facts, the play addressed social and psychological issues surrounding AIDS and

sex, drugs, prejudices, loss of support from family and friends, the stigma of the disease, and death and dying. A 10 minute intermission was incorporated into the play, and a 10-20 minute panel discussion followed the performance for those interested in discussing issues regarding AIDS. Panel members were local AIDS experts. A 30 minute skit preceded the play and relied on the tension and anxiety reducing qualities of humor through parody to present the facts about AIDS. The basis of the parody was the television game show "The Family Feud".* A graduate student directed the skit. The play was a semi-professional performance using a professional playwright's script and direction.** Both professional and semiprofessional talent from the community served as actors. A graduate student at SDSU coordinated all aspects of the play/skit development and performances.

Study Design and Analysis

Design. This study was designed to examine the educational impact of a live theater dramatization regarding AIDS in a general audience. To test knowledge and attitudes about AIDS before and after the dramatic intervention a pre-post test study design was used. A replication design, with repeated pre/post assessments of seven presentations, was used to estimate the reliability of the changes observed, thereby effecting a quasi-experimental design (26).

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* Stone R: As A Matter Of Fact (drama). San Francisco: Theatre Rhinoceros, 1985.

** Fairchild M: Miles To Go (drama). San Francisco, 1985.

Data analyses. The content of the questionnaire was divided into six separate "factors", based on their a-priori determined face valid content. The answers to related questions defining a given factor were summed to one score. All individual items which were included in a given factor were confirmed as interrelated based on a Factor Analysis. Analyses were conducted to determine whether the play was associated with change in each factor score. Table 2 shows a list of these factors and their component items. (Note: Factor VI, not shown in Table 2, were the control items mentioned above.)

Insert Table 2 here

Each factor's absolute change and direction of change was examined for each cohort. The probability of consistent change among cohorts was assessed using a binomial probability calculation, where change in the "desired" direction was assumed to have a probability of .33 (p=.33 for increase, decrease and no change, respectively) for each factor and each cohort. For each factor collapsed across all cohorts, the statistical probability of obtaining the observed change in proportion to the pre-test score by chance was assessed using Z statistics (27). This analysis estimated the change "adjusted" for various pre-test levels. A dependent t statistic was calculated for change in a selected item, concerning acceptance of homosexuality, which was not combined with other items as part of a more general "factor". Finally, an hierarchical multiple regression analysis (27) was

calculated to "predict" change in each factor. These analyses provided information about the degree to which demographic or other confounding variables might have contributed to the changes observed.

RESULTS

Demographic Characteristics

Table 1 shows the demographic characteristics for the participants of the evaluation. Approximately one half of the respondents were male; the majority were young adults, predominantly caucasion, and college students. Respondents indicated relatively low incomes, with almost 30% reporting $5,000 per year or less. The majority reported less than $25,000 per year. Respondents were about equally divided between married and never married, with a small proportion divorced or separated. In general the respondents were middle class, caucasion, young adults.

Table 3 shows the demographic characteristics and risk group membership for each cohort (ie.separate audience). Cohorts differed in their gender ratios, modal age category, income and marital status. Cohort 2, 3 and 5 reported the lowest income category; 1, 4 and 7 reported an intermediate category, and 6 reported the highest category. Cohort 4 was predominantly male, while cohorts 5 and 6 were mostly female. Not surprisingly, the majority of each cohort reported college education. The respondents were also asked whether they were a member of a risk group for contracting AIDS, such as homosexual or bisexual male,

IV drug user, hemophiliac or sexual partner of a risk group member. Among the seven cohorts, considerable variability in risk group membership was reported. Cohorts 2, 4, and 7 reported more than 40% membership in a risk group. Cohorts 3, 5, and 6 reported a relatively intermediate level (23% to 32%), and cohort 1 reported only 15% membership in a risk group for the AIDS infection. The play seemed to attract individuals who were interested in the AIDS epidemic and/or thought themselves at risk of acquiring the infection.

Insert Table 3 here

Change in Factor Scores

Across cohorts and factors, pretest scores tended to fall near the high end or low end of the scale, with the majority of the scores in the direction representing high levels of knowledge. Thus the audiences were well informed prior to the play. This left little room for "improvement", to be achieved by attending the play. For this reason analyses were conducted in two ways: overall and separately for individuals whose pretest scores were within the first 25th percentile, for a given factor scale. This allowed assessment of the educational effects for individuals most in need of education.

Transmission. The first factor examined concerned the respondents' knowledge of routes of transmission of the AIDS virus. For this factor a range of 4 to 20 was possible, where 4

equaled incorrect knowledge regarding transmission and 20 represented correct knowledge. Pre-test means among cohorts ranged from 17.5 to 18.9. Post-test means ranged from 18.9 to 19.3. The binomial probability of six of seven cohorts changing in the predicted direction by chance was less than .001. Across cohorts combined, a mean percent of baseline change of 5.49 (S.E.=1.23) was obtained, and this proved statistically significant ($Z=4.48, p<.001$). This represented a crude mean improvement of 43% of the increase possible for this factor.

Across cohorts combined 78 individuals fell within the first 25th percentile for factor 1. These audience members obtained a mean percent change of baseline of 23.1(S.E. = 4.57), and this proved significant ($Z=5.06$, $p<.001$).

Attitudes. The second factor considered consisted of items concerning attitudes regarding AIDS. These included issues such as "AIDS is God's punishment for immorality." For this factor a total score of 25 was possible, where 5 represented the least defensible attitudes (given the scientific data to date) and 25 represented disagreement with such attitudes. Pre-test means exceeded 18 in each cohort. Post-test means increased to 21.0 or higher in each cohort. Again, the binomial probability that six of seven cohorts would change in the same direction by chance was less than .001. A mean percent of pre-test change of 7.51(S.E.=1.006) was obtained for the attitude variable across all cohorts, and this too was significant($Z=7.46, p<.001$). This reflected approximately 25% increase relative to the increase possible.

Eighty two members were in the first 25th percentile for factor 2. These obtained a mean of 20.9 (S.E.=3.27) percent of pre-test change, and this proved significant ($Z=6.39$, $p<.001$).

Preventive behavior. The third factor concerned actions that could be taken to reduce the risk of AIDS. Specifically, these were establishment of monogamous relationships and the use of condoms. These two items resulted in a total scale score of 10, where 2 represented incorrect knowledge of preventive action and 10 equaled correct knowledge. Among the seven cohorts, pre-test means ranged from 7.62 to 8.89. Post-test means ranged from 8.68 to 9.21. All seven cohorts increased their knowledge of preventive actions following the play (binomial $p<.001$). Collapsed across cohorts, a mean percent of baseline change of 15.23(S.E.=3.29) was obtained and this difference was significant ($Z=4.62$, $p<.001$). This also reflected an increase of approximately 35% of the improvement possible.

For factor three, 74 individuals fell within the first 25th percentile. These obtained an average of 69.2(S.E. = 13.2) percent increase relative to pre-test scores. As above, this proved significant ($Z = 5.24$, $p<.001$).

Single vs multiple causes. The fourth factor concerned the respondents' understanding of causes of AIDS. Two items questioned whether only one factor (ie.a virus) caused the infection, or whether other factors (even if unknown) were likely to be involved in the development of AIDS. The play included dialogue which indicated that to acquire AIDS an individual had to come in contact with the virus, and that other factors related

to susceptibility were likely to be involved. The pattern of change across cohorts was again replicated for Factor 4. Six of the seven cohorts increased following the play ($p<.001$), and this increase averaged about 15% of the improvement possible. Again, across all cohorts, a significant mean percent of baseline change of 14.64(S.E.=2.51) was found ($Z=5.83$, $p<.001$).

When the lower 25th percentile ($N = 72$) was examined, a mean increase of 53.45 (S.E. = 8.94) percent of pre-test was obtained. This was significant ($Z=5.98$, $p<.01$).

Transmission myths. The final factor concerned erroneous beleifs about how one might acquire AIDS. These included casual contact with a person who had a cold or by donating blood, etc. When all cohorts were combined, the mean percent of baseline change obtained was 5.3 (S.E.=1.16), and was significant ($Z=4.57$, $p<.001$). The reliability of this change across cohorts was much less than the pattern of changes observed for all of the other factors. Only three cohorts showed absolute increase following the play; one cohort decreased and three remained about the same. The binomial probability that three cohorts among seven would change in the hypothesized direction did not reach statistical significance ($p<.27$).

However, when the lower 25th percentile ($N = 90$) was examined, a mean percent increase of 19.32 (S.E.=3.3) was obtained, and this proved significant ($Z=5.86$, $p<.001$). Figure 1 summarizes the mean percent changed for all 5 factors for the lower 25th percentile collapsed across the 7 cohorts.

Insert Figure 1 here

Acceptance of Homosexuality

One variable was concerned with the degree to which the audiences were more or less accepting about homosexuality. This item was scaled from 1 to 3, where 1 equaled more accepting and 3 equaled less accepting; a decrease in scale score represented an increase in acceptance. Collapsed across cohorts a pre-test mean of 1.95 (S.E.=.025) and a post-test mean of 1.73 (S.E.=.026) was obtained. The mean difference of .22 was found to be significant ($t(346)=7.48$, $p<.01$). This represented 24% of the decrease possible. Across cohorts, pre-test means ranged from 1.86 to 2.05; post-test means ranged from 1.64 to 1.84. All seven cohorts decreased ($p<.001$).

Here too, the lower 25th percentile(N = 29), obtained an average decrease of 40.23(S.E. = 4.18) percent of pre-test scores and this proved significant ($Z=9.63$, $p<.001$).

Analysis of confounding factors

This analysis relied on self-selected audiences who differed in nonrandom ways from one cohort to another (see Table 3). Group differences in age, education or risk group membership, etc. could have interacted with the exposure to the play to produce (or suppress) the changes observed. To examine these possibilities, several hierarchical multiple regression analyses were run for each factor's pre-test to post-test change score

(dependent variable), as well as the acceptance of homosexuality variable as a dependent variable. Seven independent variables were considered: age, education level, gender, risk group membership, having a friend who had AIDS, college student status, and marital status.

Among the five factors, significant ($p<.05$) multiple regression coefficients were obtained for three, as well as the one acceptance of homosexuality variable. In each case, the multiple R was less than .27, and explained less than 7% of the variance in each dependent variable. The statistically significant predictor variables were found to be SDSU student status and risk group membership, though due to the small amount of variance accounted for by these variables in any of the equations, these variables were not seen as particularly important. Thus, no major confounding variables were found to exist in the data.

Discussion

Most plays are not evaluated for their effects on knowledge or attitudes. Few provide as strong an evaluation as was possible in this experiment. With seven replications across different audiences known to be heterogeneous, the reliability of the changes observed was confirmed. Moreover, with the inclusion of both a control factor(which should not have changed and did not) and the use of reverse direction scales, it was possible to be most confident that changes observed represented reactions to the

play.

The first conclusion to be drawn from these results is that these audiences were relatively well educated and had a relatively complete understanding of AIDS, prior to the play. They were remarkable only in that they did not know as much as one might expect for college level individuals, where approximately 50% of some cohorts were members of a risk group for AIDS (eg. homosexual males) and could be expected to be well informed.

The second conclusion is that, in the context of only small magnitude changes possible, all audiences increased their knowledge of AIDS; knowledge of specific means of transmission and prevention, myths about transmission and attitudes regarding AIDS and homosexuality. Changes, though of modest absolute magnitude, represented as much as 43% of the improvement possible. Where ceilings exist in the measurement scales employed, this represents more change than might be expected.

Although overall the magnitude of change obtained was modest, results for the subset of the audiences who were poorly informed about AIDS prior to the play, showed a much greater magnitude of effect. For these individuals, as much as 70% improvement over pre-test scores was obtained. Interestingly, the two variables for which the greatest "improvement" was seen in this subgroup were safe sexual practices(e.g. use of condoms) and more accepting attitude toward homosexuality. These may have the most social importance for the control of the epidemic and the control of hysterical prejudice reactions to Gay men. Thus, it

appears that a dramatic play can have an important impact on an audience's knowledge and attitudes regarding AIDS.

These results suggest that dramatic plays can evoke important changes in a wide-range of people interested in these issues. This has ramifications for the media, including special news reports, where critical but incidental education may be taking place. This is equally important for the Public Health professional community as a reliable tool to be used systematically for the control of the epidemic.

The applied significance of these results may be greater than the magnitude of change obtained suggests. For Public Health purposes, media-based education may be most useful for refining existing understanding and maintaining already established attitudes and behavior. This play produced reliable and positive changes in each sample tested. This suggests that these results would generalize to similar audiences. If this type of play were to be broadcast on national television, it could elicit at least a 10% change in the knowledge and attitudes of millions of well informed people. Such a play might increase knowledge by more than 50% in millions of the poorly informed, as well. If many such media programs were to be aired regularly their cumulative effect might be to improve and maintain the population's existing sensitivity and knowledge about AIDS, reduce high risk behavior and maintain this reduction, and possibly move the socio-political related attitudes enough to reduce the stigmatization of this disease. These possibilities should be investigated in further evaluations of public media

programs for AIDS education.

This analysis concerned changes in knowledge and attitudes. This leaves open the question about actual behavior change. Follow-up studies are necessary to determine possible effects on behavior (e.g. reduction in risk taking), as well as the extent to which these effects are maintained over time.

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Table 1

Demographic Characteristics of the Audience

		Age	
Male	52.5%	17 - 22 years	30.0%
		23 - 32 years	38.9%
Female	47.5%	33 - 42 years	21.0%
		43 - 70 years	10.1%
Race/Ethnicity		**Education**	
Caucasian	85.6%	Completed college (4 years)	75.6%
Other	14.4%	Not yet completed college	24.4%
Income		**Marital Status**	
≤ $5,000	29.9%	Married, Communal Living	41.9%
5,001 - 10,000	13.1%	Separated/Divorced	11.5%
10,001 - 25,000	24.2%	Never Married/Single	46.5%
25,001 - 45,000	19.7%		
> $45,000	10.3%		

N=351

Table 2

Knowledge and Attitude Factors

Factor I	**Knowledge of Transmission Routes (possible range 4-20)**
	A) AIDS is caused by a virus
	B) Some people may carry the virus without illness
	C) Virus can be transmitted via semen
	D) Virus can be transmitted via blood
Factor II	**Attitudes about AIDS (possible range 5-25)**
	A) AIDS patients should not handle food
	B) AIDS is God's punishment for immorality
	C) Would break relationship if a friend acquired AIDS
	D) Would refuse blood transfusions unless known donor
	E) Emergency workers should refuse to help persons thought to have AIDS
Factor III	**Knowledge of Preventive Behavior (possible range 2-10)**
	A) A mutually monogamous relationship reduces risk of AIDS
	B) Using condoms reduces risk of AIDS
Factor IV	**Understanding Complex Causes of AIDS (possible range 2-10)**
	A) Only exposure to the virus causes AIDS
	B) In addition to exposure, co-factors may play a role in developing AIDS
Factor V	**AIDS Transmission Myths (possible range 3-15)**
	A) You can get AIDS like you catch colds
	B) AIDS can be transmitted by saliva
	C) AIDS can be acquired by donating blood

Table 3

Selected Demographic and Risk Group Membership by Audience Cohort

Cohort	Gender M/F (%)	Modal Age Range	Education Col/No Col (%)	Modal Income Range	Marital Status M/D/Single (%)	Risk Group Membership Risk/No Risk (%)
1 (N=43)	46.3/53.7	23-32 yrs	82.5/17.5	$10,000-25,000	48.8/17.1/34.1	15.0/85.0
2 (N=93)	59.8/40.2	17-22 yrs	72.5/27.5	< $5,000	37.4/7.7/54.9	47.3/52.7
3 (N=58)	49.1/50.9	17-22 yrs	77.2/22.8	< $5,000	45.6/15.8/38.6	29.6/70.4
4 (N=47)	68.9/31.1	23-32 yrs	84.4/15.6	$10,00-25,000	46.7/8.9/44.4	46.7/53.3
5 (N=25)	33.3/66.7	17-22 yrs	70.2/20.8	< $5,000	33.3/0/66.7	23.8/76.2
6 (N=33)	36.4/63.6	23-32 yrs	72.7/27.3	$25,000-45,000	51.5/6.1/42.4	32.3/67.7
7 (N=61)	61/39	23-32 yrs	67.8/32.2	$10,000-25,000	32.8/19.0/46.6	44.8/55.2

Total N=360*

*Subsequent Analyses N=351; the difference was due to missing data.

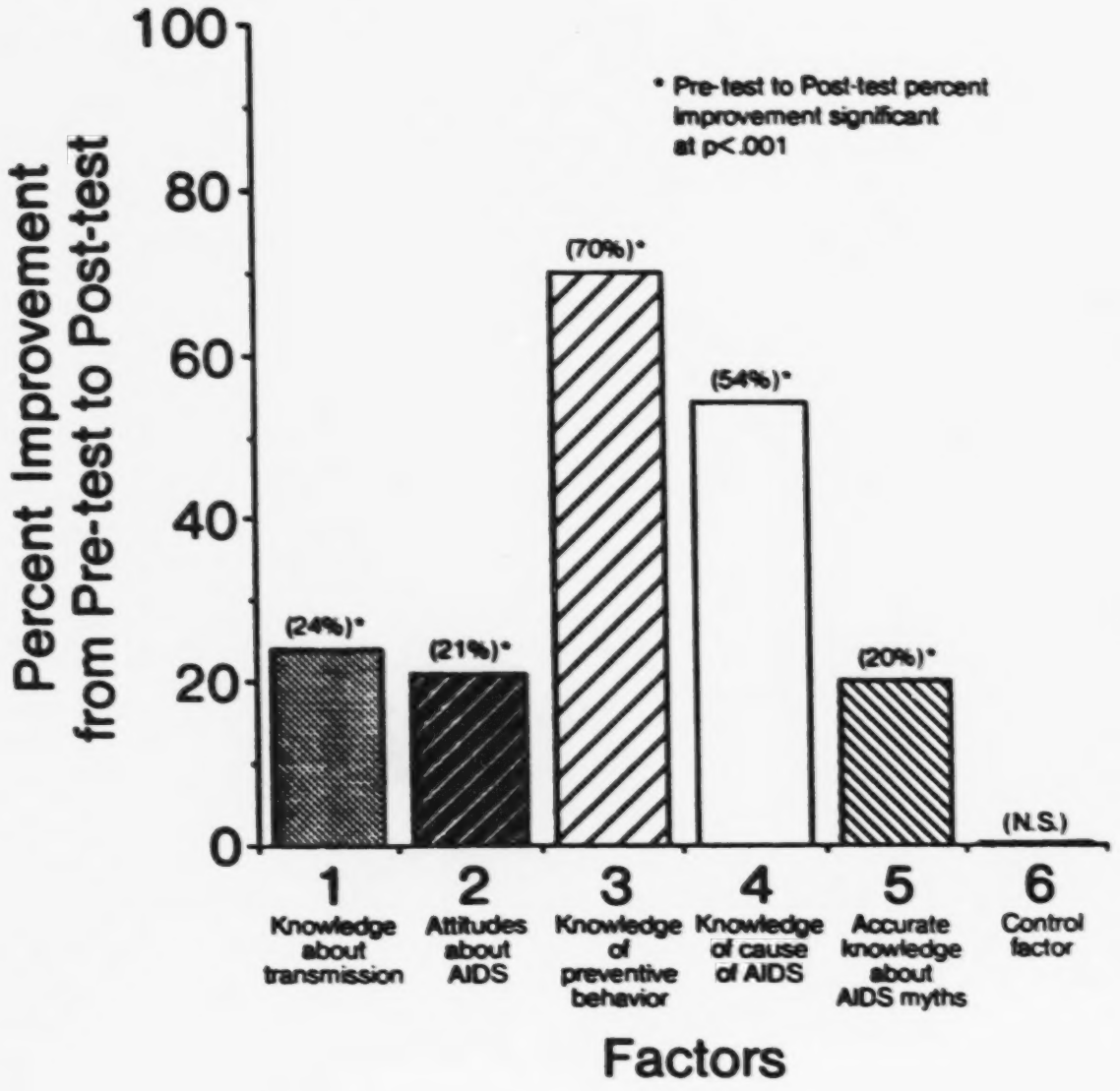

Figure 1. Percentage of improvement in knowledge and attitudes about AIDS for all subjects with low pre-test scores.